J. J. MOJONNIER.

FLASK HOLDER.

APPLICATION FILED MAY 20, 1916.

1,268,867.

Patented June 11, 1918.

Fig. 2.

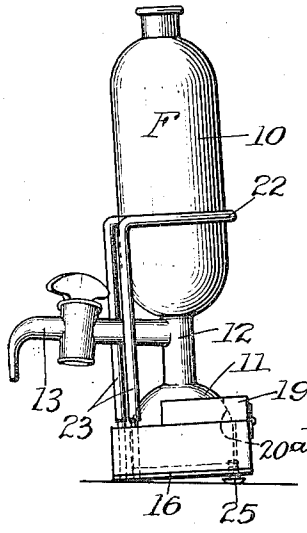


Fig. 1.

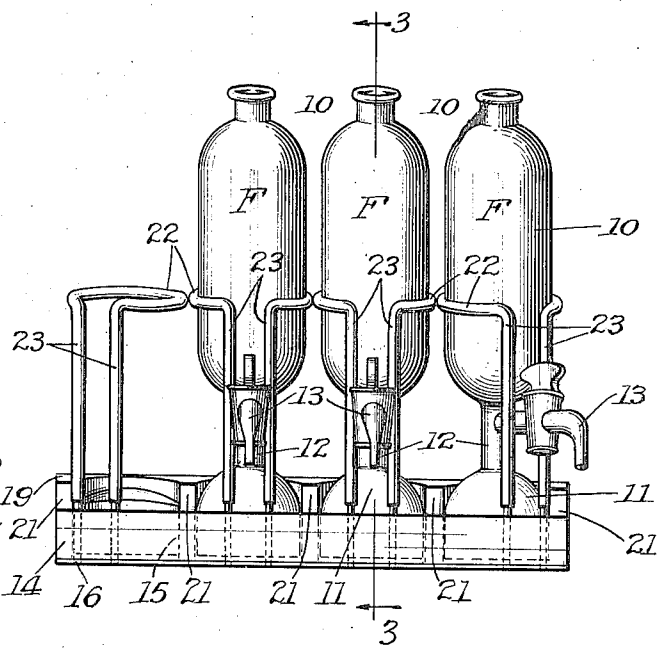


Fig. 3.

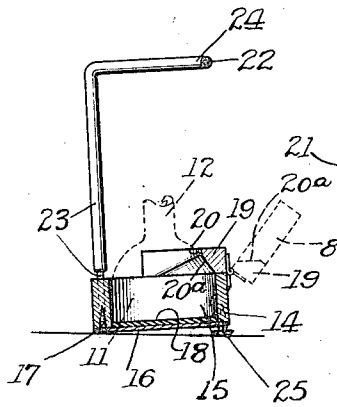
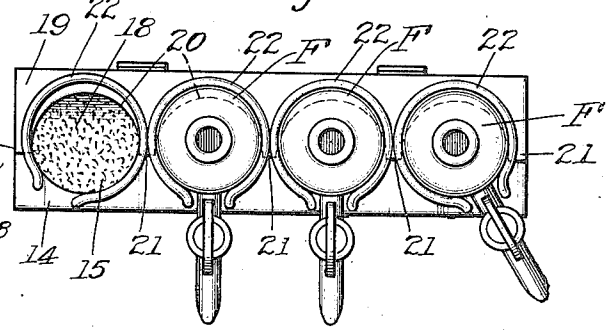


Fig. 4.



Witness

Inventor.

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by Charles S. Wilson Atty.

UNITED STATES PATENT OFFICE.

JULIUS JOHN MOJONNIER, OF OAK PARK, ILLINOIS, ASSIGNOR TO MOJONNIER BROS. CO., OF PORTLAND, MAINE, A CORPORATION OF MAINE.

FLASK-HOLDER.

1,268,867. Specification of Letters Patent. Patented June 11, 1918.

Application filed May 20, 1916. Serial No. 98,759.

To all whom it may concern:

Be it known that I, JULIUS JOHN MOJONNIER, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flask-Holders, of which the following is a specification.

In the co-pending application Serial No. 20,633, filed April 12, 1915, is described an "apparatus and method of testing milk," in connection with which is illustrated and described an extraction flask. In carrying out the method described in this application, it is necessary to first shake the flask and afterward centrifuge it, or, in other words, subject the flask and its contents to the action of centrifugal force, in order to sharply separate, one from the other, the immiscible liquids within the flask.

The present invention is designed as a holder for a plurality of the flasks during both the shaking and centrifuging steps of the method described in the said co-pending application *supra*, thus making it possible to not only simultaneously carry out the process with a number of specimens in lieu of one but to also eliminate all undue handling of the flasks.

With the above and other objects in view, as will be apparent, this invention consists in the construction, combination and arrangement of parts all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:—

Figure 1 is a front elevation of a holder constructed in accordance with the present invention, illustrating several flasks therein;

Fig. 2 is an end elevation thereof;

Fig. 3 is a vertical section taken along line 3—3 of Fig. 1, to illustrate the details of construction of one of the flask-receiving units, and

Fig. 4 is a top plan view of the holder.

The extraction flask F, for the reception of a number of which the present invention is designed, comprises a large upper chamber 10 and a small lower chamber 11, connected by a contraction 12, the latter communicating with a faucet or stop cock 13, which projects laterally from the contraction 12 and through which the contents of the upper chamber 10 are removed from the flask.

In carrying out the present invention, a base or block 14 of a suitable material is provided, in which is formed the pockets or sockets 15. These pockets or sockets 15 are each to receive the lower chamber or end 11 of an extraction flask F, the capacity and size of each holder being determined by the number of sockets or pockets. The formation of the base 14 and the arrangement of the sockets or pockets 15 therein is such that the latter are independent one from the other, and if desired extend entirely through the former. A plate 16, of metal or other adaptable material, forms the bottoms for the sockets or pockets 15, as it is of the same dimensions as the base 14 and is secured to the under side thereof by a number of screws 17 piercing the plate 16 and threaded into the base 14. A pad 18 of shock-absorbing material, such as rubber, is placed in the bottom of each pocket or socket 15 to protect the flash F to be located therein, from damage.

For retaining the flasks F in their respective sockets or pockets 15, a cover or lid 19 is hinged to one longitudinal side of the base 14 and is of a width equal to approximately one-half of the width of said base. This cover or retaining member 19 is hinged to swing to a position where it will rest flush upon the upper face of the base 14, when in its operative position, and to swing away from the base when it is desired to release the flasks (see dotted line position in Fig. 3). The free edge of the cover or retaining member 19 is provided with the approximately semi-circular recesses 20, one recess corresponding to and coöperating with each pocket or socket 15 for embracing the upper portion of the lower chamber 11 of a flask F within the pocket. As the recesses 20 are spaced one from the other, a projection or tongue 21 is created between each pair of adjoining recesses and at the ends of the cover or retaining member 19, said tongues occupying positions upon each side of the flasks in the sockets or pockets 15, when the cover or retaining member is in its operative position.

In order that the recesses 20 may conform to the contour of the lower chambers 11 of the flasks F, they are beveled as at 20^a (Fig. 3): Hence no sharp edge is presented

to the flask, and at the same time a snug fit exists between the flasks and the cover 19.

It is manifest, from the foregoing, that a flask F may be placed in each socket or pocket 15 of the holder, and all of the flasks therein treated as a unit during the shaking and centrifuging steps of the hereinbefore referred to method. By swinging the cover 19 to a position where it rests flush upon the base 14 and grasping both the base and the cover, the holder and the flasks therein may be shaken, the flasks F being held in place by the cover. After this shaking, the holder with all of its flasks F may be placed in a centrifuge, the action of the centrifugal force being sufficient to maintain the flasks in their respective sockets or pockets 15 and the cover or lid 19 in its operative position. When the centrifuging is complete, the contents of the upper chambers 10 of the flasks F may be withdrawn without removing them from the holder. Thus it will be seen that by the use of the present holder, of the size illustrated, though of course the same may be made to accommodate a greater or lesser number of flasks, four tests may be conducted simultaneously, without any chance of confusing or interchange of samples.

Compared to the depth of each socket or pocket 15, the height of the flasks F would cause them to be top heavy unless some means were provided to support the projecting portions of the flasks and also to prevent them from turning in the sockets, thereby maintaining the faucets or stop cocks 13 in fixed correlative positions. To accomplish this, a wire support is provided for each socket or pocket 15 and comprises a single strand of wire bent annularly upon itself to create the loop 22, through which passes the upper chamber 10 of the coöperating flask F. The ends of the wire are bent at right angles to the loop 22 to form the spaced, parallel uprights 23, which support the loop 22 in a superposed position parallel to the base 14 and in registration with the cooperating socket or pocket 15. At their terminals, the uprights 23 are embedded in the base 14 whereby they are permanently held fixed in any suitable manner, such as by riveting. In practice, it is desirable to keep all of the loops 22 within the confines of the vertical planes of the ends of the base 14, so that no portions thereof project beyond the base. To this end, the uprights 23 of the medial supports are embedded in the base 14 equidistantly upon each side of one end of the diameter of the adjoining socket or pocket 15, at right angles to the longitudinal side of the said base; while the uprights 23 of the end supports are both at one side of such diameter, so that the loops of these supports are positioned inwardly toward and in close proximity to the loops of the next adjacent supports. To prevent damage to the flasks F and the stop cocks or faucets 13 thereof, the loops 22 and the uprights 23 are covered with the rubber or other resilient tubing 24, which contacts directly with the flasks and their faucets or stop cocks.

In use, the flasks F are placed in the sockets or pockets 15 and are held therein by the cover or retaining member 19, in the manner heretofore described. When so located, the upper chambers 10 of the flasks rest in the loops 22, while the stop cocks or faucets 13 thereof project through the spaces between uprights 23 and terminate beyond the plane of the longitudinal edge of the base 14. By having the supports each constructed of a single strand of wire, it is possible to place a flask within the holder by inserting it through the loop 22 with the faucet or stop cock 13 thereof alined with the space between the uprights 23; and reversely, the flasks may be similarly removed.

After the flasks F have been filled with the necessary samples, ingredients, etc., and placed within the holder, all of the flasks in said holder may be shaken and centrifuged, and the faucets or stop cocks 13 opened to allow the contents to escape, without removing them from the said holder. Thus it is seen that a number of flasks F may be handled as a unit, and in the time normally consumed, heretofore, by the same operations in connection with one flask. By the spacing and arrangement of the uprights 23, the faucets or stop cocks 13 of the flasks F are held fixed, and the contents of the flasks may be allowed to escape therethrough into dishes without changing the positions of the flasks or their faucets or stop cocks.

In order to provide for the tilting of the holder so that the contents of the flasks F may readily flow therefrom when the faucets or stop cocks 13 thereof are opened, one or more set screws 25 are threaded into the plate 16 and base 14 adjacent to the longitudinal edge of the latter to which the cover or retaining member 19 is hinged. Obviously, the distance of the heads of these set screws 25 from the under side of the base 14, regulates the angle of said base to the horizontal plane, which angle may be adjusted at will by means of said set screws.

It is to be understood that the present holder may be used in any connection where it is desired to provide a container for a number of flasks or test tubes, it being possible to change the details of construction without departing from the spirit and scope hereof.

I claim:

1. In a flask holder the combination with a base provided with a plurality of sockets therein, of a cover pivoted to said base and adapted to swing thereover and rest flush against the same.

2. The combination with a base provided

with a plurality of sockets therein, of a cover pivoted to said base and adapted to swing thereover, said cover being provided with semi-circular recesses therein adapted to coincide with the sockets aforesaid when said cover is swung to a position over said base.

3. The combination with a base provided with a plurality of sockets, a cover arranged to swing over said base having recesses therein arranged to coincide with the sockets aforesaid, and an independent support coöperating with each socket.

4. The combination with a base provided with a plurality of sockets, a cover arranged to swing over said base having recesses therein arranged to coincide with the sockets aforesaid, and a support coöperating with each socket and terminating at its upper end in a loop likewise in vertical alinement with the coöperating socket.

5. The combination with a base provided with a series of sockets therein, of a support coöperating with each socket comprising a pair of uprights terminating in an angularly extending loop alined with the coöperating socket aforesaid.

6. The combination with a base provided with a series of sockets therein, of a superposed support for each socket comprising a loop alined with said socket and terminating in vertical spaced uprights secured to the base aforesaid.

7. The combination with a base provided with a series of sockets therein, of a superposed support for each socket consisting of a single section of material re-bent to form a loop, and terminals of said material extending in spaced parallel relation at an angle to said loop and terminating at the base aforesaid.

8. The combination with a base provided with a series of sockets therein, of a superposed support for each socket consisting of a single section of material re-bent to form a loop, terminals of said material extending in spaced parallel relation at an angle to said loop and terminating at the base aforesaid, and means for securing flasks within the sockets aforesaid.

9. The combination with a base having a plurality of sockets formed therein, of a superposed support for each socket, and means below said supports coöperating with said sockets for retaining the contents thereof in place.

10. The combination with a base having sockets formed therein, of a superposed support alined with each socket, and a cover coöperating with said base between the latter and the supports aforesaid for retaining the contents of said sockets therein.

11. In a flask holder the combination with a base, of means at the under side of one edge of said base to regulate the angularity thereof.

12. In a flask holder the combination with a base, of screws along the under side of one edge of said base for regulating the angularity thereof.

13. The combination with a base provided with a plurality of sockets, of a cover arranged to swing over said base having recesses therein to register with the sockets aforesaid, and a support coöperating with each socket and superposed above said base.

14. A holder for flasks or tubes of irregular shape, comprising a base provided with means for the reception thereof, in combination with means for coöperating with the irregularities in shape of said flasks or tubes to retain them in said base, and means for medially supporting said flasks or tubes.

15. A holder for flasks or tubes of irregular shape and having means for delivering the contents thereof projecting laterally therefrom, comprising a base provided with means for the reception of said tubes or flasks, in combination with means for coöperating with the irregularities in shape of said flasks or tubes to retain them in said base, and medial supports for said flasks or tubes including guides for the delivery means thereof.

JULIUS JOHN MOJONNIER.